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CHUNG, RAYMOND				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/544,165

Applicant(s)

TZIKAS ET AL.

Examiner

RAYMOND CHUNG

Art Unit

4145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)
Paper No(s)/Mail Date 20060224
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4, 9, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the radicals D₁, D₂, and D₃" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. The limitation "radicals D₁, D₂, and D₃" is not recited in claim 1 from which the instant claim depends. For the purpose of this Office action, the limitation "radicals D₁, D₂, and D₃" will be treated as referring to the radicals D₁, D₂, and D₃ recited in claim 2.

With regards to claims 9 and 12, the instant claims recite "tinctorially effective". The limitation "tinctorial effective" renders the claims indefinite because it is unclear as to what definite amount of dye mixture is required in order to be "tinctorially effective".

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

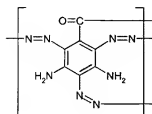
obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-7 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzikas et al (US patent 6,160,101) in view of Eichhorn (US patent 6,281,340).

With regards to claim 1, Tzikas et al discloses a reactive dye used for dyeing and printing fiber materials containing hydroxyl groups and nitrogen (C25/L31-32) having at least one structural unit of formula

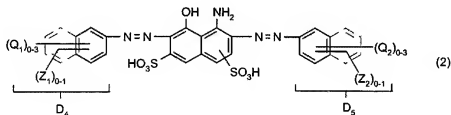


(1)

(see abstract)

wherein at least one fiber-reactive radical is contained in the dye of formula (1)
 (C45-46, compound of formula 102; fiber-reactive reactive group is $-\text{SO}_2-\beta\text{sulfatoethyl}$).

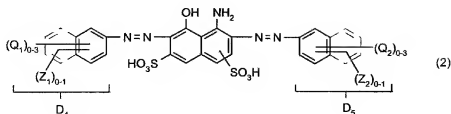
While Tzikas et al teaches reactive dyes having at least one structural unit of the formula set forth above and that such dyes can be obtained as mixtures (C24/L36-42), the reference does not teach the dye set forth above together with a reactive dye of formula



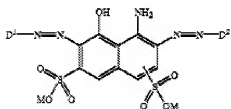
wherein $(\text{Q}_1)_{0-3}$ and $(\text{Q}_2)_{0-3}$ each independently of the other denote from 0 to 3 identical or different substituents selected from the group halogen, C1-C4alkyl, C1-C4alkoxy, carboxy and sulfo, Z1 and Z2 are each independently of the other a fiber-reactive radical, at least one fiber-reactive radical being contained in the dye of formula (2) containing at least one fiber-reactive radical Z1 or Z2.

Eichhorn discloses reactive dyes used for dyeing or printing hydroxyl- and/or carboxamido-containing materials (C6/L65-66) of the formula

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wherein $(Q_1)_{0-3}$ and $(Q_2)_{0-3}$ each independently of the other denote from 0 to 3 identical or different substituents selected from the group halogen, C1-C4alkyl, C1-C4alkoxy, carboxy and sulfo, Z1 and Z2 are each independently of the other a fiber-reactive radical, at least one fiber-reactive radical being contained in the dye of formula (2) containing at least one fiber-reactive radical Z1 or Z2 (C1/L35-45,

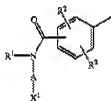


wherein

D^1 and D^2 each represent a group of the general formula

II

(II)

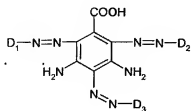


(C1/L50-60) wherein

A can be a polymethylene group (C2/L29-31) and X is $-\text{SO}_2-\text{Z}$, where Z is vinyl or $\text{CH}_2\text{CH}_2\text{Z}^1$, where Z^1 can be an alkali-detachable group (C3/L2-4) and M can be hydrogen (C3/L5)).

Tzikas et al and Eichhorn disclose analogous inventions related to reactive dyes used in dyeing and printing hydroxyl- and/or nitrogen-containing materials. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine the reactive dye of formula (1) taught by Tzikas et al with the reactive dye of formula (2) taught by Eichhorn et al into a mixture for the purpose of obtaining a dye mixture used for dyeing and printing hydroxyl-containing and/or nitrogen-containing materials. The combination of the reactive dye of formula (1) taught by Tzikas et al with the reactive dye of formula (2) taught by Eichhorn et al into a mixture would amount to nothing more than combining two compositions each useful for the same purpose in order to form a third composition used for the same purpose since it has been held that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

With regards to claim 2, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture wherein the reactive dye having at least one structural unit of formula (1) corresponds to a dye of formula



(1a)

wherein D1, D2 and D3 are each independently of the others the radical of a diazo component of the benzene or naphthalene series, wherein at least one of the radicals D1, D2 and D3 contains a fiber-reactive radical (Tzikas et al, C45-46, compound of formula 102; fiber-reactive reactive group is $-\text{SO}_2-\beta\text{sulfatoethyl}$).

With regards to claim 3, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture wherein D1, D2 and D3 each independently of the others correspond to a radical of formula (5)



and Z3 and Z4 are each independently of the other a radical of formula (3a)



wherein Y is beta-sulfatoethyl and (Q3)0-3 denotes from 0 to 3 identical or different substituents selected from the group halogen, C1-C4alkyl, C1-C4alkoxy, carboxy and sulfo (Tzikas et al, C45-46, compound of formula 102; fiber-reactive reactive group is $-\text{SO}_2-\beta\text{sulfatoethyl}$).

With regards to claim 4, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture wherein the radicals D1, D2 and D3 each independently of the others correspond to a radical of formula (5a)

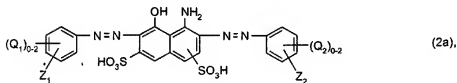
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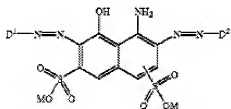
wherein $(Q_3)_{0-2}$ denotes from 0 to 2 identical or different substituents selected from the group C1-C.alkyl, C1-C4alkoxy and sulfo,

Y is vinyl, beta-chloroethyl or beta-sulfatoethyl (Tzikas et al, C45-46, compound of formula 102; fiber-reactive reactive group is $-\text{SO}_2\text{-}\beta\text{sulfatoethyl}$).

With regards to claim 5, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture wherein the reactive dye of formula (2) is a dye of formula



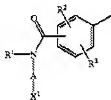
wherein $(Q_1)_{0-2}$ and $(Q_2)_{0-2}$ each independently of the other denote from 0 to 2 identical or different substituents selected from the group C1-C4alkyl, C1-C4alkoxy and sulfo, and Z1 and Z2 are as defined above (see Eichhorn, C1/L35-45,



wherein

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D¹ and D² each represent a group of the general formula
II

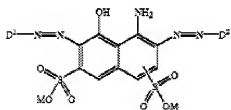


(II)

(C1/L50-60) wherein

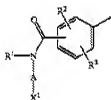
A can be a polymethylene group (C2/L29-31) and X is $-\text{SO}_2\text{-Z}$, where Z is vinyl or $\text{CH}_2\text{CH}_2\text{Z}^1$, where Z¹ can be an alkali-detachable group, such as chlorine (C3/L2-4, see also C3/L26-41) and M can be hydrogen (C3/L5)).

With regards to claim 6, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture wherein Z1 and Z2 are each independently of the other a radical of formula (3c) (see Eichhorn, C1/L35-45,



wherein

D¹ and D² each represent a group of the general formula
II



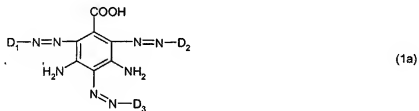
(II)

(C1/L50-60) wherein

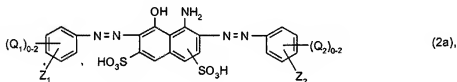
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A can be a polymethylene group (C2/L29-31) and X is $-\text{SO}_2\text{-Z}$, where Z is vinyl or $\text{CH}_2\text{CH}_2\text{Z}^1$, where Z^1 can be an alkali-detachable group, such as chlorine (C3/L2-4, see also C3/L26-41) and M can be hydrogen (C3/L5)).

With regards to claim 7, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a dye mixture comprising a dye of formula



together with a dye of formula



wherein

D1, D2 and D3 are each independently of the others a radical of formula (5a)



(see Tzikas et al,

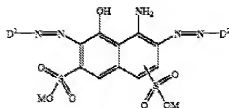
C45-46, compound of formula 102; fiber-reactive reactive group is $-\text{SO}_2\text{-}\beta\text{sulfatoethyl}$)

wherein $(\text{Q}_1)_{0-2}$, $(\text{Q}_2)_{0-2}$ and $(\text{Q}_3)_{0-2}$ each independently of the other denote from 0 to 2 identical or different substituents selected from the group C1-C4alkyl, C1-C4alkoxy and sulfo,

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Y is vinyl or beta-sulfatoethyl, and

ZI and Z2 are each independently of the other a radical of formula (3c) (see



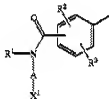
Eichhorn, C1/L35-45,

wherein

D¹ and D² each represent a group of the general formula

II

(II)



(C1/L50-60) wherein

A can be a polymethylene group (C2/L29-31) and X is $-\text{SO}_2\text{-Z}$, where Z is vinyl or $\text{CH}_2\text{CH}_2\text{Z}^1$, where Z¹ can be an alkali-detachable group, such as chlorine (C3/L2-4, see also C3/L26-41) and M can be hydrogen (C3/L5)).

With regards to claim 9, 10, and 13, modified Tzikas et al teaches all of the claim limitations set forth above, as well as a method of dyeing or printing a substrate with a dye mixture set forth above comprising applying a tinctorially effective amount of the dye mixture to the said substrate wherein the substrate is a hydroxyl-group-containing or nitrogen-containing fiber material (Tzikas et al, C25/L30-32; see also Eichhorn, C6/L65-66 and C7/63-64);

- wherein the substrate is a cellulosic fiber material (Tzikas et al, C25/L35; see also Eichhorn, C7/L8-9);

- wherein the substrate is a cotton fiber material (Tzikas et al, C25/L35; see also Eichhorn, C7/L8-9).

With regards to claim 11, modified Tzikas et al teaches all of the claim limitations set forth above, as well as an aqueous ink comprising a dye mixture set forth above (Tzikas et al, C25/L46-49, dyes can be applied to fiber material and fixed to the fiber in various ways, in particular in the form of aqueous dye solutions, which would encompass aqueous inks).

With regards to claim 12, modified Tzikas et al teaches all of the claim limitations set forth above.

While the references teach aqueous dye solutions, which would encompass aqueous inks (Tzikas et al, C25/L46-49), and that such dyes can be used for printing (Tzikas et al, C25/L31-32; see also Eichhorn, C7/L63-64), modified Tzikas et al does not specifically teach a method for ink jet printing comprising applying a tinctorially effective amount of an aqueous ink containing a dye mixture set forth above to a substrate wherein the substrate is a hydroxyl-group-containing or nitrogen-containing fiber material.

However, given that both Tzikas et al and Eichhorn are drawn to reactive dyes used for dyeing or printing fiber containing hydroxyl groups and/or nitrogen, and, given that Tzikas et al teaches the dyes as aqueous solutions, it would therefore have been

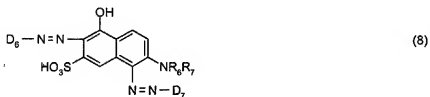
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obvious to one of ordinary skill in the art to use the reactive dye mixture set forth above in an ink jet printing process with a reasonable expectation of success.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tzikas et al (US patent 6,160,101, hereafter Tzikas '101) in view of Eichhorn (US patent 6,281,340) as applied to claim 1 above in further view of Tzikas et al (WO 00/06652, hereafter Tzikas '652).

With regards to claim 8, modified Tzikas et al teaches all of the claim limitations set forth above.

Modified Tzikas et al does not disclose a dye mixture which additionally comprises a dye of formula

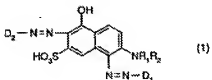


wherein

R6 and R7 are each independently of the other hydrogen or C1-C4alkyl, and

D6 and D7 are each independently of the other the radical of a diazo component of the benzene or naphthalene series.

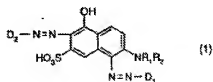
Tzikas '652 discloses reactive dye mixtures suitable for dyeing different fibrous materials, especially fibrous material containing cellulose (see abstract), comprising a dye of formula



wherein

R1 and R2 are each independently of the other hydrogen or C1-C4alkyl, and D1 and D2 are each independently of the other the radical of a diazo component of the benzene or naphthalene series (see abstract).

Modified Tzikas et al and Tzikas '652 disclose analogous inventions related to reactive dyes used for coloring cellulosic fiber material. Given that both modified Tzikas et al and Tzikas '652 are drawn to reactive dyes used for coloring cellulosic fiber material, and, given that modified Tzikas et al does not explicitly prohibit other ingredients, in light of the particular advantages provided by good overall fastness as taught by Tzikas '652 (see abstract), it would therefore have been obvious to one of



ordinary skill in the art to include the dye of formula in the mixture taught by modified Tzikas et al with a reasonable expectation of success.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

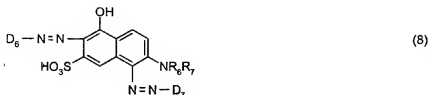
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1 and 8 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/551,319.

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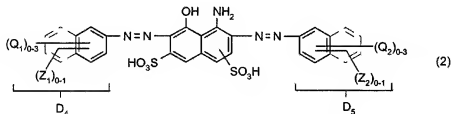
Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of copending Application No. 10/551,319 teaches a dye mixture comprising:



wherein

R6 and R7 are each independently of the other hydrogen or C1-C4alkyl, and

D6 and D7 are each independently of the other the radical of a diazo component of the benzene or naphthalene series and a dye for formula



wherein $(Q_1)_{0-3}$ and $(Q_2)_{0-3}$ each independently of the other denote from 0 to 3 identical or different substituents selected from the group halogen, C1-C4alkyl, C1-C4alkoxy, carboxy and sulfo, Z1 and Z2 are each independently of the other a fiber-reactive radical, at least one fiber-reactive radical being contained in the dye of formula (2) containing at least one fiber-reactive radical Z1 or Z2.

One of ordinary skill in the art at the time of invention would have recognized that by combining the dye mixture of claim 1 with the reactive dye of claim 8 in the instant

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application, one would arrive at the invention claimed in claim 1 of copending

Application No. 10/551,319.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND CHUNG whose telephone number is (571)270-3881. The examiner can normally be reached on Monday-Thursday, 8am-5:30pm EST, Alt. Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R.C./

4 May 2008

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4145